NEWS REPORT

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NEWS REPORT

National Academy of Sciences *National Research Council*

VOLUME VI *November–December 1956* NUMBER 6

The International Union Against Cancer

HAROLD L. STEWART, *Chairman*

United States National Committee, International Union Against Cancer

THE INTERNATIONAL Union Against Cancer is a rapidly developing international scientific organization in which the United States participates through the Academy–Research Council and the cancer research organizations of the country. The Union was created in 1933 at Madrid on the occasion of the first cancer congress. There had been small international meetings of cancer workers prior to that time but the Madrid meeting has come to be known as the first in the series. The second cancer congress was held at Brussels in 1936; the third at Atlantic City, N. J., in September 1939 competing unsuccessfully with the outbreak of World War II; the fourth at St. Louis in 1947; the fifth at Paris in 1950; and the sixth at São Paulo, Brazil, in 1954. The seventh is scheduled to convene at London in July 1958.

Organization and Program of the Union

The professional and scientific activities of the Union are carried on by commissions and committees. The Committee on International Congresses, established in 1954, is composed of a Subcommittee on Arrangements and a Subcommittee on Programs, members of which are elected by the Executive Committee. The primary function of this Committee is to assemble information on the best ways of organizing and conducting international congresses, conferences, and symposia, to insure that the varied aspects of activities in the field of cancer are properly represented and to assist the organizing committee of the host country in assembling information about cancer activities throughout the world.

In the past, the organization of international congresses and symposia has been largely in the hands of a comparatively few people. It could not be expected that these people would be intimately familiar with fields of greatest activity and with speakers best qualified to talk on all subjects in all countries. As a result, the programs occasionally were somewhat unbalanced and speakers who were most competent in a particular field were overlooked. Also, people of uncertain reputation and accomplishment were sometimes permitted to participate because the committee in the host country was unfamiliar with the local situation. It is anticipated that the Committee on International Congresses will resolve many of these problems.

Although the Committee on *Acta*, the official publication of the Union, has not yet submitted formal recommendations to the

Union, there has been already a great deal of discussion on steps to be taken. There should be an active and competent editorial committee to accept or reject papers. The Editorial Subcommittee may serve in this capacity. Manuscripts of papers presented at congresses must be available at the time of the congress. Unduly long papers will not be accepted. Review papers may be invited from recognized investigators in fields of general interest. Also, the increasing activity of the Union through the work of its Commissions and Committees should result in much more useful material being available for publication between congresses, so that *Acta* should become a more useful and interesting journal.

There now exist within the Union a Commission on Cancer Research and a Commission on Cancer Control, both of which have been active since the Sixth International Cancer Congress held in 1954. The principles of the Commission on Cancer Research, as originally stated, embrace all efforts to advance the knowledge of cancer by experimental means. The objective of the Commission on Cancer Control is to achieve the maximum control of cancer possible through utilization of all available knowledge on the causes and clinical management of the disease. To this end, the Commission encourages and assists appropriate agencies of the member nations of the Union in establishing and conducting programs designed to prevent cancer, to achieve early diagnosis, and to provide adequate treatment.

Immediately after the close of the Fifth International Cancer Congress at Paris in July 1950, a Symposium on Geographic Pathology and Demography of Cancer convened at Regents Park College, Oxford, England, under the auspices and with the financial assistance of the Council for International Organizations of Medical Sciences (CIOMS). In addition to its scientific discussions, the Symposium adopted two important recommendations. One dealt with the methodology of studies of the endemiology and the geographic pathology of cancer. The other urged the creation of a study group to further investigations of the endemiology of cancer which resulted in the creation of the Committee on Geographic Pathology under the Commission on Cancer Research.

One of the first acts of this Committee was to recommend that an international symposium be held to review existing knowledge concerning cancer of the lung, a form of cancer that soon may become the leading type of fatal cancer among males in Northwestern Europe and North America. The CIOMS provided financial support for the Symposium on Cancer of the Lung which was held at the Institut du Cancer, Louvain, Belgium, July 21–24, 1952; the proceedings were published in *Acta*.

The Committee on Geographic Pathology has actively stimulated and encouraged studies of the endemiology and geographic pathology of cancer in various parts of the world. A Symposium on Geographic Pathology was held in connection with the Sixth International Cancer Congress in São Paulo, Brazil, July 23–29, 1954. The question of cancer of the esophagus was discussed, and the proceedings will be published in *Acta*. Last August and September, the Committee held three meetings in Africa on cancer of the liver and other forms of cancer peculiar to the African Negro south of the Sahara. The incidence of liver cancer and associated precancerous conditions is much higher among many natives of Africa than among people of similar genetic and physiological constitution in other parts of the world. These meetings made it possible for experts from several countries of the world to see the problem of cancer in the African Negro at first hand and to discuss it in detail with local investigators and to recommend new methods of approach for study and research.

The Committee on Clinical Stage Classification and Applied Statistics was established at a meeting of the Executive Committee of the Union on July 28, 1954, by combining two existing committees. Until that time much of the work in this field had been carried on by the Committee on Tumor Nomenclature and Statistics under the able chairmanship of Dr. Isabella H. Perry of the University of California. This Committee has made considerable progress toward reaching international agreement on *a*) nomenclature of tumors of experimental animals, *b*) nomenclature of tumors of man,

and *c*) clinical stages of some accessible cancers. A proposed general code for the clinical stages of accessible cancer has been published and a provisional draft of the Manual of Tumor Nomenclature and Coding was published by the American Cancer Society in 1951.

The nomenclature of tumors of man and the clinical stages of accessible cancer were discussed at a meeting of the Committee in Copenhagen in July 1955. At this meeting, a resolution was adopted requesting the Union to invite appropriate international organizations to appoint representatives to a committee to coordinate the activities of the various international organizations concerned with the development of a uniform nomenclature for clinical stages of cancer and related topics.

The Committee on Tumor Nomenclature and Statistics held a Symposium on Clinical Stages of Cancer in July 1954, during the Sixth International Cancer Congress. At the meeting the Tumor Nomenclature Code was approved and recommended to the World Health Organization for adoption.

It also was resolved that the newly created permanent Committee on Clinical Stage Classification and Applied Statistics be requested to stage cancer of the uterus, breast, and larynx, using the staging previously accepted with such editorial improvements and additional explanations as were indicated at the Symposium. It was requested further that drafts of clinical staging be circulated to appropriate specialist societies and journals before final action is taken.

Space does not permit a description here of the activities of other committees. However, those described illustrate the types and varieties of work carried on by committees of the Union.

United States Participation in the Union

Following the Paris congress in 1950 there was a growing feeling on the part of individuals and organizations in the United States that some group should be formed to strengthen United States participation in the International Union Against Cancer. In April 1951, the American Association for Cancer Research selected William U. Gardner to serve for the second time as the United States representative on the International Research Commission of the Union. Dr. Gardner requested and received the authorization of the Association to suggest to other organizations interested in cancer, that representation of the United States in the Union be formalized through the establishment of a perpetuating organization affiliated with the Academy–Research Council. At a meeting of representatives of the American Association for Cancer Research, the American Cancer Society, and the National Cancer Institute on October 21, 1951, the Academy–Research Council was asked to establish the United States National Committee for the International Union Against Cancer to be composed of at least five members selected from the nominees whose names had been submitted by the cancer organizations.

The general functions of the National Committee were to be—

1) To select and instruct representatives to meetings of the Union and its Commission(s) and to receive reports from these representatives;
2) To devise means for the support of the functions of the Committee, its delegates, and representatives in relation to general and specific functions;
3) To establish an office or facilities for the transmission of information relating to cancer to the Union or Commission(s) or its members in the several countries and to receive similar material for appropriate distribution in the United States;
4) To approve all groups from the United States that may apply for membership in the Union and otherwise to encourage membership in the Union so as to foster its activities; and
5) To assist in the selection of papers which are submitted from the United States for presentation on the scientific program of the international congresses.

With the assistance and cooperation of the Office of International Relations of the Academy–Research Council, the National Committee was established by the Division of Medical Sciences in January 1952 with the following membership:

WILLIAM U. GARDNER, Yale University, *Chairman*
CHARLES S. CAMERON, American Cancer Society
E. V. COWDRY, Washington University
JOHN R. HELLER, National Cancer Institute
PAUL E. STEINER, University of Chicago

An appreciable part of the National Committee's work since its establishment has been the raising of funds for international congresses and other activities of the Union.

During the past several years the following institutions and organizations have contributed to the support of the Union or of the National Committee and it is a pleasure to acknowledge their valuable assistance and cooperation:

American Association for Cancer Research
American Cancer Society, Inc.
American Medical Association
Anna Fuller Fund
Damon Runyon Memorial Fund for Cancer Research
Elsa U. Pardee Foundation
Jane Coffin Childs Memorial Fund for Medical Research
M. D. Anderson Hospital and Tumor Institute
National Cancer Institute
Washington University

The extent of United States participation in the affairs of the Union may be measured by the fact that 28 people in the United States are serving as officers or members of Commissions and Committees of the Union. Included in that number are the Secretary General, a Vice President, and two members of the Executive Committee of the Union. Following the organization of the United States National Committee, similar committees were formed in Germany, Great Britain, and France.

The International Union Against Cancer is no exception to the rule that international scientific organizations frequently face serious financial problems. Prior to 1952, a few organizations in the United States regularly contributed comparatively small sums to the Union. The dues contributed by member countries were insufficient to meet operating expenses. At the Assembly of the Union at São Paulo in 1954, it was felt that all member countries should contribute equally to the basic operation of the Union. Since some thirty countries were members of the Union, the dues were set at $400, an amount adequate for the basic administrative budget of approximately $12,000. However, this amount does not provide for any meetings of committees or commissions, for symposia or other special activities as described earlier. Funds for these activities must be obtained from other sources.

It remains to be seen whether the dues schedule adopted at São Paulo will provide the Union with the income needed. There is some reason to believe that a graduated scale of payments should be introduced. The United States National Committee would go along with such a plan if presented at the next Assembly of the Union and is prepared to increase its annual dues substantially commencing in 1957.

Although finances have been a major concern of the Union and of the United States National Committee, the most fundamental and difficult problem is to determine what the nature and activities of the International Union Against Cancer should be. Should the work of the Union be limited to holding an international congress once every four or five years? Should it be a very active organization with many committees sponsoring frequent symposia and carrying on studies in such fields as epidemiology and geographic pathology?

On the other hand some of the best sources of material for study in these fields are in geographical areas of the world that have little or no resources for research. Certainly an international organization can serve an important function not only in these fields but also in others such as tumor nomenclature, coding, and staging.

Although these questions have not been resolved, the consensus seems to be that working symposia on broad scientific fields of general interest should be held in connection with international cancer congresses. Also there may be justification for holding occasional small symposia or working conferences on highly specialized fields between congresses. One thing is certain; interest in the international activities of the Union, on the part of cancer workers everywhere, is growing steadily and a lively, profitable program is sure to result.

SCIENCE NEWS

RESOLUTIONS RESPECTING EVENTS IN HUNGARY

The National Academy of Sciences at its autumn meeting in Washington adopted the following resolution respecting recent events in Hungary:

Those members of the National Academy of Sciences of the United States of America present at a meeting in Washington on November 10, 1956, unite in expressing their profound admiration and sympathy to fellow scientists in Hungary and to all the men and women of that nation who have demonstrated their love of liberty with sacrificial devotion during the tragic events of the past few weeks. American scientists look forward with hope to a time when their Hungarian colleagues, freed from external oppression, will be able to join fully in the international exchange of information, discussion and encouragement which is essential to the progress of science.

Detlev W. Bronk expressed his satisfaction that the Academy's resolution could be associated with a similar statement adopted by the American Philosophical Society, the oldest of the great scholarly societies of the United States. He said that the statements of the Academy and of the Society recognize with humility and deep gratitude the desperate and courageous struggle of Hungarians for those principles which are precious to all who value the right to seek truth and to teach it freely.

The following statement was adopted by the American Philosophical Society in Philadelphia:

The American Philosophical Society regards with the greatest concern the events of recent weeks in Hungary. The members of the Society, assembled November 17th in Executive Session in Philadelphia, declare the greatest admiration for the people of Hungary in their defense of freedom and express profound sympathy for the tragic suffering which they have so resolutely endured. The members of the Society look forward with confidence to the time when free intellectual exchange with the Hungarian people and between all the peoples of the earth will be firmly re-established.

William J. Robbins, President of the Society, noted that the American Philosophical Society Held at Philadelphia for Promoting Useful Knowledge was founded in 1743 by that great patriot and lover of liberty, Benjamin Franklin. He said that the action taken by the Society was in full accord with the principles for which Benjamin Franklin struggled during his lifetime and for which he is being honored at present throughout the world.

CONFERENCE ON EVALUATION OF PHARMACOTHERAPY IN MENTAL ILLNESS

A conference on the evaluation of pharmacotherapy in mental illness was held in Washington, D. C., September 21 and 22. This conference, under the joint sponsorship of the National Institute of Mental Health, the Academy–Research Council, and the American Psychiatric Association, was organized in the fall of 1955 to provide a thorough review of the methods available for carrying out research in this area and to critically appraise the assets and limitations of available research techniques. Planning meetings during the spring of 1956 resulted in the organization of five committees dealing with special aspects of the problem. The primary issues and problems emerging from the work of these committees, which included the preparation and discussion of 35 working papers on special topics, were presented to a group of 500 psychiatrists, pharmacologists, and other interested persons attending the main conference.

The conference reviewed a great many methods which may be of help in the preclinical or clinical study of psychopharmacological agents, discussing their theoretical implications and practical assets and limitations in considerable detail. This exchange of ideas and problems between experts representing a variety of disciplines was felt to be fruitful both in underlining the different existing approaches to present problems and in suggesting new ways in which these could be attacked in the immediate future.

In general, however, the conference made apparent the many gaps in our understanding of the actions of psychopharmacological agents and the limitations of the methods currently available for solving these problems. Although a number of promising techniques and methods exist or are in the

process of being developed, both the clinicians and the preclinical scientists felt that no definitive "standard operating procedure" for either the clinical study or preclinical testing of psychopharmacological agents could be drawn up at this time. The clinical evaluation of drugs must be accompanied by the development of new methods for drug study and by work on the basic mechanisms of drug action if rapid progress in this field is to be achieved.

The need for the establishment of a central information agency in the field was stressed, as was the need for the training of investigators skilled in more than one of the pertinent disciplines. It was suggested that the study of drug effects on both animal and human behavior, with special attention to possible adverse effects, be given some priority. The point at which drugs graduate from the laboratory into human testing was felt to warrant special examination and a conference on the problem was suggested by the executive committee of the conference. Further well designed clinical studies were felt to be badly needed. A caution was expressed concerning the premature carrying out of large-scale cooperative studies, which, if improperly designed, might answer only limited questions at great expense.

The proceedings of the conference will be published by the Academy–Research Council and will provide a vast fund of information concerning research needs and problems. This should be of special value in view of the extensive program of grants-in-aid being launched by the Psychopharmacology Research Center of the National Institutes of Health.

AMERICAN GEOLOGICAL INSTITUTE

At the annual meeting of the Board of Directors of the American Geological Institute held in Minneapolis on November 2, the following officers were elected to serve for 1956–57: J. L. Gillson, Development Department of E. I. du Pont de Nemours Company, *President;* J. V. Howell, petroleum geologist of Tulsa, Okla., *Vice President;* and Donald H. Dow, U. S. Geological Survey, *Secretary-Treasurer.*

CONFERENCE ON ELECTRICAL INSULATION

By invitation from the General Electric Company, the 25th annual meeting of the Conference on Electrical Insulation was held at the General Electric Research Laboratory, Schenectady, N. Y., October 8–10.

During the 3-day conference 20 papers were presented at 4 technical sessions and 4 round-table sessions were held. On the afternoon of Tuesday, October 9, Peter J. W. Debye of Cornell University delivered the second Whitehead Memorial Lecture. Professor Debye chose as the title of his lecture "The Behavior of Solutions (nonionic) in Strong Inhomogeneous Electric Fields." Several tours through the research laboratory were also arranged for the Conference members by the General Electric Company.

At the Conference banquet held on Tuesday evening, Irving Langmuir, Academy member and consultant with the General Electric Research Laboratory at Schenectady, was the dinner speaker.

At the business meeting of the Conference the following officers were appointed for 1957: T. W. Dakin, Westinghouse Electric Research Laboratories, *Chairman;* E. R. Thomas, Consolidated Edison Company of New York, *Vice-Chairman;* and S. W. Zimmerman, Cornell University, *Secretary.* The Conference voted unanimously to hold the 1957 meeting at Pocono Manor Inn, Pocono Manor, Pa. on October 21–23, 1957.

INTERNATIONAL CONFERENCE ON LOW TEMPERATURE PHYSICS

The Commission on Very Low Temperature Physics of the International Union of Pure and Applied Physics will hold its fifth international conference at the University of Wisconsin, Madison, Wisc., on August 26–31, 1957. Previous conferences on low temperature physics and chemistry have been held at the Massachusetts Institute of Technology in 1949; at Oxford, England, in 1951; Houston, Tex., in 1953; and in Paris, France, in 1955. Professor Joseph R. Dillinger, Director of the Cryogenic Laboratory of the University of Wisconsin, will be in charge of arrangements for the fifth international conference of this Commission.

CONFERENCE ON THE DISPOSAL OF INFECTIOUS WASTES FROM HOSPITALS

A special conference to review the methods used by hospitals in disposing of infectious wastes and to assess their adequacy in preventing the spread of disease among the hospital population and the public was held on September 17 by the Subcommittee on Waste Disposal of the Committee on Sanitary Engineering and Environment. The Subcommittee, which has been studying the subject at the request of the U. S. Army, was assisted by a panel of experts in the fields of infectious disease and hospital management.

The medical panel members found no positive evidence that the practice of discharging liquid and semisolid hospital wastes into sewerage systems had been responsible for transmitting disease. Some reservations were expressed regarding special circumstances such as the presence of large numbers of patients with acute infectious hepatitis, unusually heavy concentrations of infectious material in sewage, or the use of effluent from sewage treatment plants for spraying lawns or for recharging ground water supplies. To obtain more conclusive evidence, it was urged that full advantage be taken of new methods for studying the origin and distribution of viruses in sewage when outbreaks of disease occur.

Solid infectious wastes, it was agreed, are best disposed of by incineration. However, problems of operation arise when small departmental incinerators are used and also when wastes must be stored and then transported to central installations for disposal. While the use of central installations was preferred for the present, further studies of both systems were recommended.

IGY ANTARCTIC ORIENTATION

The U. S. National Committee for the IGY held an antarctic orientation conference for the scientists who will man six United States IGY stations on the South Polar Continent. The orientation program took place at the U. S. Navy Construction Battalion Center at Davisville, R. I., October 15–19, where the 70 scientists and supporting naval personnel gathered. Some twenty experts presented the program of geophysical research through a series of lectures, discussions, films, and informal sessions. The scientists were also fitted with their cold-weather clothing.

The briefings at Davisville, in day and evening sessions, allowed the scientists who will be working and living together in isolated snow-bound stations to get acquainted with each other and to obtain a clearer idea of the conditions under which they will have to live and work for the next 18 months or more.

Joseph Kaplan, Chairman of the U. S. National Committee for the IGY, Laurence M. Gould, Director of the U. S. National Committee's Antarctic Program, and Harry Wexler, Chief Scientist for the Antarctic, addressed the group on the highlights of the IGY program. The special topics discussed at the 5-day orientation conference included:

1) Establishment of stations, station facilities, fire prevention, and emergency caches, by Lt. Howard Flippin;
2) Air support of field operations, by Col. R. K. McCoskrie;
3) Communication, by Comdr. C. A. Snay;
4) National and international aspects of the IGY, by Dr. Kaplan;
5) Antarctic exploration, geography, and geology, by Dr. Gould;
6) IGY Antarctic program, by Dr. Wexler;
7) Antarctic flora and fauna, by Carl Eklund;
8) Solar activity, world days, and ionospheric physics, by Alan H. Shapley;
9) Aurora and air glow, by Norman J. Oliver;
10) Weather and climate, by Dr. Wexler and Morton Rubin;
11) Glaciology and oceanography, by Albert P. Crary;
12) General safety precautions, by Capt. Finn Ronne;
13) Cosmic rays, by Rochus Vogt;
14) Seismology and gravity measurements, by J. H. Nelson and Mr. Crary;
15) Environmental studies, by Kaare Rodahl; and
16) Use of clothing and equipment, by Sir Hubert Wilkins and Michael Slauta.

LECTURE BY ALFRED BLALOCK

The Academy–Research Council lecture series for 1956–57 was opened on November 27 by Alfred Blalock, Professor and Director of the Department of Surgery, The Johns Hopkins University School of Medicine, and member of the Academy, who spoke on "Surgery of the Heart and Great Vessels."

Dr. Blalock, whose contributions to this field have won international acclaim, described the advances that have revolutionized cardiovascular surgery during the past 15 years. Prior to the war, the risks were prohibitive except in the repair of wounds and a few conditions resulting from infection. Today, radical operations for the repair of congenital anomalies and other defects are almost routine in a number of hospitals.

The control on infection by antibiotics and the development of new surgical procedures account for much of this progress. Most dramatic, however, are the techniques by which life can be maintained while the heart is opened or the large vessels clamped. Hypothermia, by reducing the oxygen needs of body tissues, enables the brain and other organs to survive brief interruptions of blood flow. Longer operations are made possible by machines that do the work of the heart and lungs, taking the blood from the large veins, oxygenating it, and pumping it back into the arterial system.

Of wide interest are the methods for increasing the blood supply to the heart following coronary occlusion. Deliberate irritation of the heart surface to promote vascular growth has given good results; other promising methods involve removing the blood clot from the coronary artery, or grafting new arteries into the heart muscle. Where large arteries and veins are dangerously enlarged or constricted, entire sections can be removed and replaced with natural grafts or plastic prostheses. Narrowed valves in the heart chamber can be exposed for surgical repair, and leaking aortic valves can sometimes be replaced with plastic ones. Great success has been achieved in treating patients with congenital anomalies, such as the well-known "blue babies"; some defects in the structure of the heart can be surgically repaired, and the flow of blood through the lungs is increased by operations on the blood vessels to correct or compensate for deficiencies in the circulation.

In closing, Dr. Blalock predicted even more astounding advances in the next few years. With the heart and great vessels now accessible to surgery, the door to further progress is wide open, presenting a great challenge to the ingenuity of the surgeon.

SYMPOSIUM ON HUMAN ENGINEERING, PERSONNEL, AND TRAINING RESEARCH

The second annual symposium on human engineering, personnel, and training research was held at the Academy–Research Council building on November 15 and 16 under the sponsorship of the Committee on Military Psychology.

William A. Hunt of Northwestern University, Chairman of the Committee on Military Psychology, served as general chairman of the symposium. Roger Russell, Secretary of the American Psychological Association, Arthur Riopelle of Emory University, Lyle Lanier of the University of Illinois, and Professor Hunt served as chairmen of the four technical sessions.

The subject matter of the 28 research papers presented ranged from laboratory studies on motivation to the effects of whole-body ionizing radiation upon psychomotor performance. The papers represented a 1956 cross section of research on manpower selection, classification, utilization, training, and engineering psychology sponsored by the U. S. Air Force.

The papers will be published in the Academy–Research Council series. The report of the 1955 symposium, Academy-Research Council Publication 455, is now available from the Publications Office.

INTERNATIONAL INSTITUTE OF REFRIGERATION

On November 20 at Paris the Executive Committee of the International Institute of Refrigeration (IIR) voted unanimously to accept the National Academy of Sciences–National Research Council as a "national member" of the Institute. This action marks the culmination of several years of negotiation which started when the Government of the United States was formally invited to become a national member of the IIR.

Acceptance of national membership in the IIR carries with it certain specific responsibilities including the formation of a national committee to effect participation in the Institute and the annual payment of member country dues. The Academy–Research Council has assumed these responsibilities having received assurance that the

national societies representing the scientific and technical refrigeration interests of the country will lend full cooperation.

The International Institute of Refrigeration is an intergovernmental body established in 1920. It is governed by an *Agreement* concluded at Paris on December 1, 1954. The Institute is organized to promote the production and utilization of refrigeration on an international scale by means of scientific, technical, and economic researches, the centralization of information, the promotion of refrigeration knowledge, the publication of papers and documents in the field, standardization in refrigeration technology and regulations, and the organization of international congresses of refrigeration.

At the request of the Academy–Research Council Richard C. Jordan of the University of Minnesota represented the Academy–Research Council at the Ninth International Refrigeration Congress held at Paris in 1955. The following members of the International Relations Committee of the American Society of Refrigerating Engineers also attended the congress: H. C. Diehl, Director of the Refrigeration Research Foundation; Carl F. Kayan, Columbia University; and W. T. Pentzer, U. S. Department of Agriculture. After the congress at Paris these individuals joined Dr. Jordan in recommending procedures whereby the United States might participate appropriately in the Institute.

These recommendations and further correspondence with officials of the IIR led to the calling of an ad hoc meeting at the Academy–Research Council on November 5 to consider ways to effect United States adherence to the IIR and to draft tentative plans for the establishment of a United States National Committee. Dr. Jordan served as chairman of this ad hoc meeting. Other participants included:

FERDINAND G. BRICKWEDDE, Pennsylvania State University
JOHN E. DUBE, Alco Valve Company
BURGESS H. JENNINGS, Northwestern University
CARL F. KAYAN, Columbia University
W. T. PENTZER, U. S. Department of Agriculture

W. H. Cook, Director of Applied Biology of the National Research Council of Canada and currently a Vice President of the IIR, also attended the meeting.

The ad hoc committee felt that national membership in the Institute should be effected by the U. S. Government. However, since Government membership in international organizations can only be accomplished through an act of Congress, the ad hoc committee recommended that the Academy–Research Council seek the approval of the Department of State for U. S. membership to be effected through the Academy–Research Council. This was done and the application for membership as stated earlier was unanimously accepted by the IIR.

The Academy–Research Council will now establish a U. S. National Committee for the IIR and select a delegate and a substitute delegate to the Executive Committee of the Institute. This committee will advise the Academy–Research Council on appropriate United States participation in the Institute on behalf of scientists, engineers, and technologists in the United States interested in all aspects of refrigeration. The committee will have as one of its major responsibilities the financing of the annual dues to the Institute and support of travel and other activities connected with meetings and the quadrennial international congresses of refrigeration.

SECOND PESTICIDE CONFERENCE

A conference on the 1957 program for pesticide applications and regulations was held under the auspices of the Agricultural Research Institute on November 15. C. E. F. Guterman of Cornell University served as conference chairman. The conference was attended by more than a hundred representatives from industry, state agricultural experiment stations, and federal agencies concerned with the protection of agricultural crops and the laws designed to protect the users of pesticides and the consuming public.

The federal agencies participating in the program included the Food and Drug Administration, U. S. Department of Agriculture, and the U. S. Public Health Service. State experiment station representatives came from Iowa, Florida, and Michigan. Industry was represented through the National Agricultural Chemicals Association.

INTERNATIONAL ASSOCIATION OF HYDROLOGY

The International Association of Hydrology, one of the seven associations which make up the International Union of Geodesy and Geophysics, held a symposium in Dijon, France, September 20–26. Over a hundred hydrologists from more than twenty countries attended the symposium which dealt with floods, ground water, and evaporation. Arranged by L. J. Tison, General Secretary of the Association, the symposium was in commemoration of the 100th anniversary of Darcy's Law. The location of the symposium was especially appropriate, since it was in Dijon that Darcy developed the principles which led to the law bearing his name.

In commemoration of the centennial of Darcy's Law, the petroleum branch of the American Institute of Mining, Metallurgical, and Petroleum Engineers prepared a scroll which was presented to the Mayor of Dijon at the inaugural meeting.

Following the symposium, a field trip from Dijon to Grenoble, thence to Briancon through Lautaret Pass, and down the Durance Valley to Aix-en-Provence, afforded an opportunity to see a meteorological station in the Alps, a modern hydroelectric plant and ground water recharge station at Chateaurenard, as well as many other items of interest.

The more than seventy papers presented during the symposium have been published in three volumes and may be purchased from the General Secretary of the Association, L. J. Tison, 61 rue des Ronces, Gentbrugge, Belgium.

COMMITTEE ON HEARING AND BIO-ACOUSTICS

The fourth annual meeting of the Armed Forces–National Research Council Committee on Hearing and Bio-Acoustics (CHABA) was held on October 30 and 31. S. Douglas Cornell, Executive Officer of the Academy–Research Council welcomed the members and guests.

Maj. Gen. Silas B. Hays, Surgeon General of the Army, Brig. Gen. Marvin C. Demler, Deputy Commander for Research and Development, Air Research and Development Command, and Rear Adm. Rawson Bennett II, Chief of Naval Research, summarized the bio-acoustic problems that are of importance to the Armed Forces. These papers served to highlight problems of present importance to the military services and demonstrated the need for additional research in specific areas. Adm. Bennett emphasized that preconceived notions of what is or is not possible must not be permitted to restrict the course of research. Instead, research personnel should be flexible enough to try unorthodox and original methods in developing new solutions.

Six panels reviewed the problems of and the progress in the field of bio-acoustics since the formation of CHABA in 1953 and the publication of the Benox Report (*see* NEWS REPORT, Vol. 4, pp. 53–56, 1954). The Benox Report was the first general survey of the biological effects of really high intensity noise on man.

One panel delineated the problem area of communication in noise. Another panel discussed the conservation of hearing in noise and brought out that the military services have already initiated conservation programs. Three CHABA working groups have contributed to formulation of the program in this field. In a very recent regulation the concept of monitoring audiometry has been accepted by the U. S. Air Force as the way to find and check hearing loss. A suggested card for recording audiometric data has also been submitted to the armed services and adopted in principle by the Air Force.

The familiar conflict between danger to hearing and discomfort and other disadvantages of ear plugs and ear muffs was again reviewed by the panel on ear protection.

The effects of blast, mechanical vibration, and shock is a new field of investigation in which exploratory work on man and animals is now yielding results. To aid in this research, the U. S. Army is constructing a large experimental blast tube at the Army Medical Research Laboratory.

The panel on noise sources and noise suppression discussed many noise problems associated with the flight and maintenance of jet aircraft. In particular, progress in the field of airborne and ground type noise suppressors was reviewed.

The non-auditory effects of high intensity noise on man also were considered. This is a new field in which the techniques of research are being developed and employed on a trial basis. It was noted that the noise exposures actually encountered in the spring of 1956 on the flight decks of carriers were not producing any alarming non-auditory effects.

Ninety-two members and a number of guests attended the two-day session. The membership included representatives from the British Joint Services Mission, the Canadian Joint Staff, and the Canadian Defence Research Board.

THIRD SYMPOSIUM ON ORGANIZATION OF APPLIED RESEARCH

The Organization for European Economic Cooperation (OEEC), established after World War II and, as its name implies, a mechanism whereby European States may work together to solve their economic problems, has as one of its interests the furtherance of industrial research. In the past the OEEC has conducted international meetings on subjects related to this general topic.

During the week of October 7 another such meeting was held in Vienna, Austria, on the organization of applied research with special emphasis on scientific personnel for industrial research and other purposes. Delegations were present from most of the European countries and from the United States and Canada who, although they are not members, generally cooperate with the OEEC in such meetings. The United States delegation was composed of the following members:

IRWIN STEWART, President of West Virginia University, *Chairman*
L. W. BASS, Arthur D. Little Company
GEN. CARLTON S. DARGUSCH, Assistant Director for Manpower, U. S. Office of Defense Mobilization.
HARRY C. KELLY, Assistant Director, National Science Foundation
NORMAN A. SHEPARD, formerly Chemical Director, American Cyanamide Company
C. E. SUNDERLIN, Deputy Director, National Science Foundation
M. H. TRYTTEN, Director, Office of Scientific Personnel, National Academy of Sciences–National Research Council.

It had not been expected that the meeting would result in concrete actions. Its purpose was a general airing of problems associated with the subject matter and an exchange of views. The problems which have concerned the United States for several years with respect to training, supply, and utilization of scientific personnel were also objects of concern at this meeting, for Europe is just now arriving at an awareness of these problems. To some extent this awareness has been accentuated by recruitment of technical personnel abroad by American companies.

POSTDOCTORAL RESIDENT RESEARCH ASSOCIATESHIPS

The Academy–Research Council postdoctoral resident research associateships will be offered for the 1957–58 academic year at the Argonne National Laboratory in Lemont, Ill.; the National Bureau of Standards in Washington, D. C., and Denver, Colo.; the Naval Research Laboratory in Washington, D. C.; and at the Oak Ridge National Laboratory in Oak Ridge, Tenn.

These postdoctoral associateships have been established to provide young scientists of unusual ability and promise an opportunity for advanced training in basic research in a variety of fields. The most modern facilities are available in the general areas of biology, ceramics, chemistry, electronics, mathematics, metallurgy, and physics. Examples of more specific fields within these areas are: radio astronomy, statistics and mathematical biology, computer design, radiation and high temperature chemistry, microwave component theory, semiconductors, numerical analysis, liquid metals, low temperature, solid state and reactor physics. Research in visual psychophysics and engineering psychology is also available.

Applicants must be citizens of the United States and have training in one of the listed fields equivalent to that represented by the Ph.D. or Sc.D. degree. They must have demonstrated superior ability for creative research. Stipends are up to $7,035 a year. Applications must be filed at the Fellowship Office on or before January 11, 1957. Awards will be made about April 1, 1957.

Further information and application materials may be secured from the Fellowship Office of the Academy–Research Council.

OPERATION MOONWATCH

Under the name Operation Moonwatch, the volunteer observation program of the United States IGY earth satellite is rapidly organizing teams of observers throughout the country, wherever the earth satellite will be visible. Considerable interest in this program has been shown, the observer teams receiving financial support from a wide variety of local organizations. The first test of the program will be held early in 1957 when there will be an alert and reports will be forwarded for collation to the Smithsonian Astrophysical Observatory, which has been given responsibility by the U. S. National Committee for the IGY for the satellite optical and visual observation programs.

Although a particular individual will, for obvious reasons, have difficulty in viewing the satellite, trained teams of observers can undertake a satellite acquisition program. By placing binoculars on fixed mounts and employing a group of such installations disposed so as to cover a large region of the heavens with good data as to position of the installation, timing of observations, and critical review of the observations by professional leaders, a major contribution to the overall program becomes possible. Should the radio system fail, visual observation would be the only method of obtaining the critical initial information as to the satellite's ephemerides.

INTERNATIONAL CONFERENCE ON SCIENTIFIC INFORMATION

Under the auspices of the National Academy of Sciences an ad hoc Conference Committee met at the Academy on Sunday, November 11, to review the preliminary plans for a proposed International Conference on Scientific Information. The Conference is being planned and organized by the National Science Foundation, the American Documentation Institute, and the National Academy of Sciences–National Research Council. On the basis of the ad hoc Committee's considered evaluation, the sponsors have decided to make definite arrangements for holding the Conference in the last quarter of 1958, probably in November.

Under the chairmanship of Warren Weaver, Vice-President for the Natural and Medical Sciences of the Rockefeller Foundation, 54 scientists met and assessed the plans developed by a preliminary planning committee composed of 14 scientists and documentalists of the Washington area who are interested in the problems of organizing scientific information. Lloyd V. Berkner, President of Associated Universities, Inc., and President of the International Council of Scientific Unions (ICSU), represented ICSU at the meeting. Alexander King, Chief Scientific Officer of the Intelligence Division of the United Kingdom Department of Scientific and Industrial Research, represented Unesco and the International Federation for Documentation.

During the coming months efforts will be made to stimulate the preparation of papers within the general areas of interest outlined in the Conference agenda for presentation at the Conference.

All requests for further information about the Conference should be addressed to the Executive Secretary, Dr. Alberto F. Thompson, International Conference on Scientific Information, National Academy of Sciences–National Research Council, 2101 Constitution Avenue, Washington 25, D. C.

FIRE RESEARCH CORRELATION CONFERENCE

The Committee on Fire Research and the Fire Research Conference under the chairmanship of H. C. Hottel, Massachusetts Institute of Technology, held a fire research correlation conference on November 8 and 9. The overall purpose of the research correlation conference was to provide for the interchange of knowledge and stimulation of ideas in areas of research, both basic and applied, in uncontrolled combustion and fire extinguishment.

L. M. K. Boelter, University of California at Los Angeles, was chairman of the panel which presented fire research from the viewpoint of the Federal civil agencies; C. C. Furnas, Assistant Secretary of Defense for Research and Development, was chairman of the military panel which discussed fire research in the national defense agencies; and Howard W. Emmons, Harvard Univer-

sity, served as chairman of the panel on fire systems and models.

Another special feature of the program was the presentation of three papers by Lloyd Layman, Federal Civil Defense Administration, who described the mass fire problem; D. I. Lawson, United Kingdom Department of Scientific and Industrial Research, who reported on fire research in the United Kingdom; and by Philip M. Morse, Massachusetts Institute of Technology, who discussed the field of operations research and its possible application to fire research.

Attendance was by invitation in order to keep the size within limits conducive to effective operation. The United States members represented universities, industrial and private research laboratories, industry and insurance, private organizations concerned with fire, fire departments, the U. S. Department of Defense, as well as non-military Federal and State agencies. The following foreign participants were also in attendance:

LIONEL M. AFFLECK, Canada, Department of Lands and Forests
J. D. BABBITT, Canadian Scientific Liaison Office, Washington, D. C.
LT. COL. J. CHANTEAUD, France, Chief of Civil Defense Technical Department
W. E. EGGINK, The Netherlands, Assistant Chief Inspector, Fire Service
H. S. HADOW, United Kingdom Scientific Mission, Washington, D. C.
GEN. D. R. A. VAN LANGEN, The Netherlands, Chief Inspector, Fire Service
D. I. LAWSON, United Kingdom Department of Scientific and Industrial Research
OSVALDO PIERMARINI, Italy, Commandante, I Corpo Vigili del Fuoco
MAJ. E. ROMBAUT, Belgium, Ministry of the Interior
RAYMOND RUDLER, France, Deputy Civil Defense Advisor to NATO
H. M. SMITH, United Kingdom, Her Majesty's Chief Inspector of Fire Services

SECOND CONFERENCE ON SARCOIDOSIS

On October 21 and 22, the Division of Medical Sciences held its second conference on sarcoidosis with Esmond R. Long, Academy member and Chairman of the Subcommittee on Tuberculosis, as chairman. Planned at the request of the Veterans Administration, the meeting brought together a group of 24 scientists with active interest in this disease of unknown etiology and pathogenesis to review the progress made since the first Academy–Research Council conference in 1948 and to exchange informally ideas on lines of future investigation.

The conference suggested that epidemiological investigations, amplifying in the civilian population the rewarding studies already made among returning veterans of World War II, might provide a further clue to the etiology of this disease, significant racial and geographical differentials in the incidence of which are strongly suggested by the data among veterans. The widely quoted definition evolved at the first conference was revised, and the following recommendations were made for future work:

1) Intensive study of epidemiology.
2) Further work on the natural history, progression, and course of the disease.
3) A pathological case registry for sarcoid-like lesions at the Armed Forces Institute of Pathology.
4) A study of constitutional factors in the host.
5) Systematic application of all newer research principles and techniques to the study of sarcoidosis.
6) A controlled study of the effect of adrenal cortical steroids upon the lesions of sarcoidosis.
7) International cooperation and study of geographic variations in incidence and other features of the disease.
8) Further study of the Kveim antigen, both with respect to the possibility of producing it in tissue culture and in regard to the establishment of a repository for standardization of the antigen.

The conference recommended that an interim organization be maintained with a view to stimulating additional epidemiological studies and making plans for another conference in two years.

AGRICULTURAL BOARD

In response to requests which have been received from various sources over several years, the Agricultural Board has established six new committees. The committees and their chairmen are as follows:

1) Agricultural Meteorology and Climatology—M. H. Halstead, Texas Agricultural and Mechanical College
2) Soil and Water Conservation—John F. Timmons, Iowa State College
3) Soil-Crop-Water Relationships—M. B. Russell, University of Illinois
4) Plant Breeding and Genetics—R. P. Murphy, Cornell University
5) Economics of Fertilizer Use—E. O. Heady, Iowa State College
6) Plant Composition and Soil Nutrients—A. Ulrich, University of California

AGRICULTURAL RESEARCH INSTITUTE

The fifth annual meeting of the Agricultural Research Institute (ARI) was held on October 15 and 16. Participants on the program included S. Douglas Cornell, Academy-Research Council; Byron Shaw, U. S. Department of Agriculture; and C. E. Kellogg, U. S. Soil Conservation Service. Lynn Loosli, representative of the Future Farmers of America, and James DuPont of the E. I. Dupont de Nemours Company were featured speakers. There were three panels on industry-government relationships concerned with agricultural engineering, plant breeding, and research support.

Special reports were presented by the ARI committees concerned with communications, conferences, and the recruitment of scientists.

The Institute reelected Walter C. Dutton, Dow Chemical Company, President and M. T. Goebel, E. I. Dupont de Nemours Company, Vice President. Bert Johnson of the National Cotton Council was elected Secretary to succeed Norman Kennedy of the Corn Products Research Foundation.

FULBRIGHT AGREEMENTS WITH LATIN AMERICAN COUNTRIES

On October 31 an agreement was signed by Governments of Ecuador and the United States placing in operation a program of educational exchanges under authorization of the Fulbright Act. On November 5 a similar agreement was signed by Argentina and the United States. Agreements with Chile and Peru were announced previously making a total of four Latin American countries now participating in the Fulbright Program. The Committee on International Exchange of Persons publicized awards for the latter two earlier in the year.

Information about specific opportunities in Ecuador and Argentina will be issued as soon as educational commissions have been established in these two countries to assist in the administration of the programs. Inquiries about awards for university lecturing and advanced research should be directed to the Committee on International Exchange of Persons at the Academy–Research Council.

INTERNATIONAL CONFERENCE ON ANALYTIC FUNCTIONS

Theory of analytic functions will be the theme of an international conference to be held at the Institute for Advanced Study at Princeton, N. J., September 1–14, 1957. Lectures and seminars will run from Monday through Friday both weeks of the conference.

There will be a small number of principal hour-long addresses. In addition several seminars will be conducted each day in the following fields:

1) Theory of functions of several complex variables;
2) Conformal mapping and Schlicht functions;
3) Riemann surfaces;
4) Theory of automorphic functions; and
5) Analytic functions as related to Banach algebras.

Membership in the conference is by invitation. About sixty mathematicians have been invited to participate, including about twenty-five from the following foreign countries: England, Finland, France, Germany, India, Italy, Japan, Sweden, and Switzerland. The committee in charge of the conference is composed of Marston Morse, *Chairman*, Arne Beurling, and Atle Selberg, all of the Institute for Advanced Study.

The papers presented at the seminars will be reproduced and made available for limited distribution. The principal hour-long addresses will appear in book form in the Princeton Series and may be obtained from the Princeton University Press.

FOOD AND NUTRITION BOARD

The Food and Nutrition Board held its 50th meeting on October 26. Worthy of special attention were the reports of the Committees on Food Protection, Amino Acids, Protein Malnutrition, and Fats. The members of the Committee on Fats presented a special symposium dealing with the possible relationships of natural and hydrogenated fats to hypercholesteremia and atherosclerosis. The Committee on Amino Acids prepared a statement on the supplementation of dietary proteins with amino acids which the Board adopted.

At the dinner meeting of the Board, John B. Youmans, Dean of the Medical School of Vanderbilt University, described the activities of the Interdepartmental Committee on Nutrition for National Defense.

MINNEAPOLIS GEOLOGICAL CONVENTION

As in the past, six of the member societies of the Division of Earth Sciences held their annual meetings jointly from October 31 to November 2 in Minneapolis, Minn. The Department of Geology of the University of Minnesota and the Minnesota Geological Survey were hosts to the Geological Society of America, the Paleontological Society, Mineralogical Society, Society of Economic Geologists, Society of Vertebrate Paleontology, and the Geochemical Society. Field excursions preceding the meetings gave visitors an opportunity to study pre-Cambrian metamorphosed and intruded terranes, the iron ranges, Paleozoic lead and zinc deposits, and Pleistocene glacial features.

Richard J. Russell, Past-Chairman of the Division of Earth Sciences, was elected President of the Geological Society of America at the Minneapolis meeting.

INTERNATIONAL GEOGRAPHICAL UNION

The Chairman of the U. S. National Committee of the International Geographical Union (IGU) has received the first issue of the "Information Bulletin" prepared and distributed by the Secretary-Treasurer of the IGU. It is understood that this Bulletin will appear at irregular intervals and will contain information of interest to national committees and to the geographers in member countries of the IGU.

The first Bulletin announces *1)* that the IGU with the cooperation of the Science Council of Japan will sponsor a regional conference in Tokyo and Nara from August 29 to September 3, 1957; 2) that Leo Alpert of the Army Map Service (USA) will represent the IGU at the second meeting of the Commission for Climatology of the World Meteorological Organization, which will take place in Washington, D. C., January 14–26, 1957; *3)* that the publication of the *IGU Newsletter* will continue; *4)* that membership of the IGU commissions established at Rio de Janeiro will be published in the next issue of the *IGU Newsletter;* and *5)* that correspondence with the IGU Secretariat should be addressed to Professor Hans Boesch, Secretary-Treasurer, IGU, 30 Freiestrasse, Zurich 32, Switzerland.

FIFTH NATIONAL CLAY CONFERENCE

The Clay Minerals Committee conducted the Fifth National Clay Conference at the University of Illinois at Urbana on October 8–10. About two hundred investigators in the fields of mineralogy, ceramics, agronomy, petroleum geology and petrolem engineering, highway research, and construction engineering attended the technical sessions. A one-day excursion provided an opportunity for many of the participants to study field exposures in the Champaign-Urbana area.

The Clay Minerals Committee announced at the meeting that the proceedings volume of the Fourth (1955) Conference had been published as Publication 456 and was available from the Publications Office of the Academy–Research Council. The proceedings volumes for the Second and Third Conferences are also available.

STAFF APPOINTMENTS

On November 2, **Joseph O. Fletcher** joined the staff of the secretariat of the U. S. National Committee for the IGY. Mr. Fletcher, who holds an M.S. degree in Physics from the University of California at Los Angeles, will serve as Arctic Basin Project Leader, organizing and coordinating the work to be done on two drift-ice stations as well as studies of the Arctic Ocean ice cover. For his part in organizing and leading the first U. S. Air Force expedition in 1952 to the T-3 ice island in the Arctic, commonly known as Fletcher Ice Island, he was awarded the Legion of Merit. Mr. Fletcher, who holds the rank of colonel in the U. S. Air Force, has been made available to the U. S. National Committee for six months' temporary duty.

The Division of Medical Sciences announces the appointment of **Arthur S. Cain, Jr.** to the professional staff in October. Dr. Cain will conduct a survey of national fellowship programs in the medical sciences and will be associated with the Medical Fellowship Board, the Committee on Medicine and Surgery, the Subcommittee on the Cardiovascular System, and the U. S. National Committee for the International Union of Physiological Sciences. Dr. Cain is a sur-

geon who has also held appointments in pathology, internal medicine, and physiology. Prior to his appointment he was Assistant Medical Director of the American Heart Association and instructor in physiology at Columbia University's medical school.

James R. Weisiger has been appointed a professional associate in the Division of Medical Sciences, where he will work particularly with the Subcommittee on Blood and Related Problems, the Subcommittee on Shock, and their associated panels. The appointment will be effective December 3, 1956. Dr. Weisiger received his doctorate from Johns Hopkins University and held research fellowships at Harvard Medical School. From 1945 to the present he was with the Rockefeller Institute for Medical Research.

The Materials Advisory Board announces the appointment of **H. D. Keiser** as staff engineer effective November 1. Mr. Keiser has served as Chief of the Trace Elements Office, U. S. Geological Survey and as science advisor with the Atomic Energy Commission. Before coming to the Academy–Research Council he was Chief of the Rare and Precious Metals Branch of the U. S. Bureau of Mines.

The Prosthetics Research Board announces that, effective February 1, 1957, **Brig. Gen. Harold W. Glattly** of the Medical Corps, U. S. Army, will become the Executive Director of the Board and **Col. Robert E. Benjamin,** Comptroller of the First Army, will become the new Executive Secretary. General Glattly, now Surgeon of the First Army at Governors Island, N. Y., is retiring from active service and will devote his full time to the furtherance of the prosthetics program. He will fill the post vacated by the resignation of **Col. Gerald R. Tyler.** When Col. Benjamin replaces **A. Bennett Wilson, Jr.,** as Executive Secretary, Mr. Wilson will continue to serve the Board as Staff Engineer.

FELLOWSHIP PROGRAMS

MERCK POSTDOCTORAL FELLOWSHIPS

The Merck senior postdoctoral fellowships are once again being offered in the biological, chemical, and bio-physical sciences, including the preclinical medical sciences. These fellowships, supported by Merck and Co., Inc., and administered by the Fellowship Office of the Academy–Research Council, are open to United States citizens who have demonstrated marked ability in research in one of the above areas and who wish to broaden their fields of investigational activity by acquiring some familiarity with another.

Applicants must produce evidence of training in biology, chemistry, or physics equivalent to that represented by the Ph.D. degree and must have had at least three years of postdoctoral professional experience, only one of which may have been fellowship work.

Stipends for these senior fellowships will be set by the Merck Board and may be as much as $6,000 a year.

Applications must be received in the Fellowship Office by January 15, 1957. Awards will be announced as soon as possible after March 1, 1957.

Additional information and application blanks may be obtained from the Fellowship Office of the Academy–Research Council.

NATIONAL SCIENCE FOUNDATION FELLOWSHIPS

The Fellowship Office of the Academy–Research Council is again assisting the National Science Foundation by accepting and processing fellowship applications for the 1957–58 academic year. The Foundation plans to award approximately 800 graduate

and 175 postdoctoral fellowships in the mathematical, physical, medical, biological, engineering, and other sciences including anthropology, psychology (other than clinical), geography, certain interdisciplinary fields, and fields of convergence between the natural and social sciences. These fellowships are open only to citizens of the United States.

Graduate fellowships are available to those who are working toward the masters' or doctoral degrees. College seniors who expect to receive a bachelor's degree in the 1956–57 academic year are also eligible. Postdoctoral fellowships are available to individuals who have a Ph.D. in one of the fields listed above or who have its equivalent in research training and experience. Holders of the M.D., D.D.S., or D.V.M. degree are also eligible provided they can present an acceptable plan of study and research.

Additional information and application forms may be obtained from the Fellowship Office of the Academy–Research Council. Applications for postdoctoral fellowships must be received in the Fellowship Office by December 24, 1956; applications for graduate fellowships must be received by January 7, 1957.

RECORD OF MEETINGS

September

7 Agricultural Research Institute, Projects and Proposals Committee, *Pittsburgh*

10 Confidential Review Committee for Bruce Williams Process for Production of Manganese, *Joplin, Mo.*

10–11 AASHO Road Test Advisory Committee, *Lasalle, Ill.*

11 International Conference on Scientific Information, Planning Committee

12 Federal Construction Council, Task Group on Floor Coverings
Federal Construction Council, Operating Committee
Special Committee on Chemical-Biological Coordination Center

13 Sub-panel on Materials for Use above 1700° F.
Federal Construction Council, Agenda Meeting on Paints for Structures

14 USA National Committee, International Union for Pure and Applied Physics, *Ottawa, Canada*

15 Bio-medical Instrumentation Survey Committee

17 Conference on Disposal of Infectious Wastes from Hospitals

18 Panel on Textiles
Panel on Fluorspar
Committee on Industrial Chemistry, *Atlantic City*
Subcommittee on Waste Disposal

18–22 Conference on the Evaluation of Pharmacotherapy in Mental Illness

19 Committee on Biological Chemistry, *Atlantic City*
Panel on Semi-conductors

September

19 International Conference on Scientific Information, Planning Committee

19–20 Committee on Meteorology

20 Subcommittee on Nuclear Constants, *Chalk River, Canada*

21 Advisory Group to U. S. Member of Unesco Advisory Committee on Arid Zone Research
Committee on Photobiology

23 Food and Nutrition Board, Committee on Fats, *Chicago*

24 Subcommittee on Trauma
Conference on Electrical Insulation, Finance Committee

24–28 Symposium on Naval Hydrodynamics

25 Confidential Review Committee on Freeport Sulphur Co.'s Production of Sulphur, *New Orleans*
Subcommittee on Shock and Panel on Plasma, Joint Meeting

26 Conference on Heat-Treated Plasma Preparations

27 Subcommittee on Elastomers, *Natick, Mass.*
International Conference on Scientific Information, Planning Committee
Committee on Nuclear Science, Subcommittee on Instruments and Techniques, *Gatlinburg, Tenn.*

27–28 Subcommittee on Stress

27–29 Conference on Multichannel Pulse Height Analyzers, *Gatlinburg, Tenn.*

28 Plumbing Research Committee

29 USA National Committee, International Union Against Cancer
Special Committee on Chemical-Biological Coordination Center

30 International Conference on Scientific Information, Planning Committee

October

1 Institute of Laboratory Animal Resources, Governing Board
1–2 Committee on Agricultural Pests
2 Panel on Metals Fabrication
Committee on Fire Research, Subcommittee on Classification
3 Committee on Cartography, Advisory to Department of State
Food Protection Committee, Ad hoc Subcommittee on Definition of the Practical Equivalent of Zero
Food Protection Committee, Ad hoc Subcommittee on Dietary Carcinogens, *Bethesda, Md.*
Subcommittee on Food Technology
Panel on Elastomers, *New York City*
3–4 Food Protection Committee and Industry Committee, Joint Meeting
4 Ad hoc Subcommittee on Contract Evaluation on an Electron Accelerator, *Chicago*
International Conference on Scientific Information, Planning Committee
5 Advisory Board on Education
6 Subcommittee on Anesthesia
Committee on Disaster Studies
National Science Foundation Postdoctoral Fellowship Evaluation Committee
6–7 Biology Council, Subcommittee on Precollege Education
7 National Science Foundation Postdoctoral Fellowship Evaluation Boards
8–9 Committee on Economics of Motor Vehicle Size and Weight
8–10 Fifth National Clay Conference, *Urbana, Ill.*
9–12 Titanium Process Review Panel
10 Panel on Adhesives
Panel on Dielectrics, *Schenectady*
Committee on Latin America, *New York City*
11 Subcommittee on Thermal Factors in Environment
Advisory Group on Flaw Detection, *Cleveland*
Subcommittee on Phosphors and Insulator Type Photoconductors
AASHO Road Test, Public Relations Panel, *Chicago*
11–13 USA National Committee, International Scientific Radio Union, *Berkeley, Calif.*
12 Subcommittee on Food Sanitation
12–13 Committee on Geography, Advisory to Office of Naval Research
13 Division of Earth Sciences, Executive Committee
13–15 Organizing Committee for General Assembly of International Scientific Radio Union, *Berkeley, Calif.*, and *Boulder, Colo.*
14 National Academy of Sciences–National Research Council, Governing Board
14–16 Agricultural Research Institute and Agricultural Board

October

15 Committee on Protein Malnutrition, *New York City*
16 Committee on Sanitary Engineering and Environment
17 Biology Council, Subcommittee on Adult Education, *New York City*
17–19 AASHO Road Test, Operating Committee on Materials
20 Committee on Cancer Diagnosis and Therapy
Institute of Laboratory Animal Resources, Conference of Mammalian and Population Geneticists
20–21 Biology Council, Subcommittee on College Education, *St. Louis*
21–22 Conference on Sarcoidosis
22 Committee on Urban Research
USA National Committee, International Union on Crystallography
Advisory Committee on Brittle Fracture Mechanics, *Providence, R. I.*
Panel on High Temperature Alloys
Panel on Titanium Sheet Rolling
23 Materials Advisory Board
Federal Construction Council, Task Group on Paints for Buildings
International Conference on Scientific Information, Planning Committee
24 Ad hoc Meeting on International Union for History and Philosophy of Science
25 Committee on Vision, Executive Council
Committee on Amino Acids
Committee on Cereals
Committee on Dietary Allowances
Food and Nutrition Board, Executive Committee
Nuclear Data Group
Special Committee on Natural Resources
26–27 Food and Nutrition Board
27 Committee on International Directory of Anthropologists
Committee on Soils-Calcium-Chloride Roads, *Gatlinburg, Tenn.*
Subcommittee on Blood and Related Problems, *Detroit*
Panel on Sterilization of Blood and Plasma, *Detroit*
29 Subcommittee on the Skeletal System
Committee on Hearing and Bio-Acoustics, Executive Council
29–30 Biology Council
30 Flaw Evaluation Advisory Group, *Columbus, Ohio*
Building Research Advisory Board
International Conference on Scientific Information, Planning Committee
American Geological Institute, Glossary Committee
30–31 Committee on Hearing and Bio-Acoustics
31 Federal Construction Council, Task Group on Working Drawings and Specifications
American Geological Institute, Executive Committee

NEW PUBLICATIONS

Brozek, Josef, *ed. Body Measurements and Human Nutrition.* Detroit, Mich., Wayne University Press, 1956. 167 p. $3.50. (Proceedings of Conference on the Role of Body Measurements in the Evaluation of Human Nutrition, sponsored by the Committee on Nutritional Anthropometry, Food and Nutrition Board, NAS–NRC.)

Clifford, Roy A. *The Rio Grande Flood, a Comparative Study of Border Communities in Disaster.* Washington, NAS–NRC Committee on Disaster Studies, 1956. (NAS–NRC Publication 458. Committee on Disaster Studies. Disaster Study No. 7.) 145 p., illus. $2.50.

Conference on the Production of Inbred Mice. *Proceedings . . . August 6, 1956.* Washington, NAS–NRC Institute of Laboratory Animal Resources, 1956. 42 p.

Federal Construction Council. *Electrical Load Growth in Buildings . . . Technical Report by Task Group T-17.* Washington, NAS–NRC Building Research Advisory Board, 1956. 48 p. $1.00.

Harris, William J., and Williams, Clyde. *An Interpretive Report on the Metallurgical and Economic Aspects of Ship Steels and Their Relation to Ship Failures. Final Report of Project SR-135 to the Ship Structure Committee.* Washington, NAS–NRC, 1956. 99 p. (Serial No. SSC-80.)

Hechtman, R. A. *Thermal Stresses in Ships. Final Report of Project SR-129 to the Ship Structure Committee.* Washington, NAS–NRC, 1956. 155 p. (Serial No. SSC-95.)

Kennedy, S. J., *ed. The Utilization of Chicken Feathers as Filling Materials. A Conference Sponsored by the Headquarters Quartermaster Research and Development Command, U. S. Army Quartermaster Corps, Natick, Mass., April 28–29, 1955.* Edited by S. J. Kennedy, Adolf Schubert, and Louis I. Weiner. Washington, NAS–NRC Advisory Board on Quartermaster Research and Development, 1956. 179 p., illus. (Available from: Headquarters Quartermaster Research and Development Command, Natick, Mass.)

Kernohan, James W., and Sayre, George P. *Tumors of the Pituitary Gland and Infundibulum.* Washington, Armed Forces Institute of Pathology, 1956. (*Atlas of Tumor Pathology.* Section X, Fasc. 36.) 81 p., illus. $1.00. (Available from: American Registry of Pathology, Armed Forces Institute of Pathology, Washington 25, D. C.)

Martin, D. C., *et al. Evaluation of Weld-Joint Flaws as Initiating Points of Brittle Fracture. First Progress Report of Project SR-131 to the Ship Structure Committee.* Washington, NAS–NRC, 1956. 88 p. (Serial No. SSC-86.)

National Research Council. Building Research Institute. *Design for Environment: Floor-Ceilings and Service Systems in Multi-Story Buildings.* Washington, 1956. (NAS–NRC Publication 441.) 141 p., illus. $4.00.

National Research Council. Committee on Nuclear Science. *Nuclear Processes in Geologic Settings, Proceedings of the Second Conference, Pennsylvania State University, September 8–10, 1955.* Washington, 1956. (NAS–NRC Publication 400. Committee on Nuclear Science. Nuclear Science Series Report No. 19.) 204 p., illus. $2.00.

National Research Council. Highway Research Board. *Chemical and Mechanical Stabilization . . .* Washington, 1956. (NAS–NRC Publication 418. Highway Research Board Bulletin 129.) 110 p., illus. $2.25.

National Research Council. Highway Research Board. Committee on Roadside Development. *Report . . .* Washington, 1956. (NAS–NRC Publication 419.) 70 p., illus. $1.35.

National Research Council. Highway Research Board. *Curing of Concrete, 1925–1955.* Washington, 1956. (NAS–NRC Publication 430. Highway Research Board Bibliography 18.) 98 p. $1.80.

National Research Council. Highway Research Board. *Durability of Concrete . . .* Washington, 1956. (NAS–NRC Publication 416. Highway Research Board Bulletin 128.) 50 p. $0.90.

National Research Council. Highway Research Board. *Highway Research Board Publication Index 1950–1955.* Washington, 1956. 105 p. $1.95.

National Research Council. Highway Research Board. *Index to Highway Research Correlation Service Circulars. Circulars 1 to 305.* Washington, 1956. 17 p.

National Research Council. Highway Research Board. *Parking and Buying Habits of a Store's Customers, a Supplement to Special Report 11 "Parking as a Factor in Business" . . .* Washington, 1956. (NAS–NRC Publication 273c. Highway Research Board Special Report 11-C.) $0.60.

National Research Council. Highway Research Board. *Parking and Its Relationships to Business, Summary Report of Project.* Washington, 1956. (NAS–NRC Publication 273d. Highway Research Board Special Report 11-D.) 16 p. $0.60.

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Notice of Academy Meetings

NATIONAL ACADEMY OF SCIENCES

Annual Meeting, Washington, D. C., April 22–24, 1957

NATIONAL ACADEMY OF SCIENCES—NATIONAL RESEARCH COUNCIL

Governing Board, Washington, D. C., December 9, 1956
Governing Board, Washington, D. C., February 3, 1957
Governing Board, Washington, D. C., March 31, 1957
Governing Board, Washington, D. C., June 16, 1957

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